

REMARKS

Claims 1, 8-10, 17 and 18 are pending in this application. Claims 8 and 17 are canceled without prejudice or disclaimer, and claims 1, 9, 10 and 18 are amended herein. Upon entry of this amendment, claims 1, 9-10 and 18 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is discussed below.

Claims 1, 8-10, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka (U.S. Pat. No. 5,079,030) in view of Takashi et al. (JP Pub. No. 2001-149857) and Carpenter (U.S. Pat. No. 5,320,673) and Noritake et al. (JP 2003-117481) and Yoshioka et al. (U.S. PGPUB No. 2002/0007769). (Office action paragraph no. 1, page 4)

Reconsideration of the rejection is respectfully requested in view of the amendments to claims 1 and 17 and the evidence in the attached Declaration under 37 CFR 1.132.

[1] Examiner's position

The Examiner maintains the rejection of the inventions of Claims 1, 8 to 10, 17, and 18 as obvious over Tomioka (U.S. Pat. No. 5079030) in view of Takashi et al. (JP 2001-149857), Carpenter (U.S. Pat. No. 5320673), and Noritake et al. (JP 2003-117481).

Specifically, the Examiner's position is as follows:

(a) "[Tomioka teaches the limitation of] applying an aqueous luster thermosetting base coating composition to a substrate in two to five stages, in such a manner that the thickness of

the base coating composition applied in each stage becomes 0.3 to 5 microns when cured. . . . Tomioka clearly teaches applying a base coating to a substrate (in this case the substrate is an automobile body having a dried coating) in two stages wherein the thickness of the base coating applied in each stage becomes 0.3 to 5 microns (see column 4, lines 19-32)" (Office Action, page 2, line 8 from the bottom to the last line of page 2); and

(b) "The claims broadly recite any water-soluble or water-dispersible, crosslinkable functional group-containing resin, and any cross linking agent and any flaky luster pigment having the recited dimensions. However, the Declaration provides unexpected results only for the combination of a specific resin (the acrylic resin of the Declaration), crosslinking agent (the specific crosslinking dispersion disclosed in the Declaration), and flaky luster pigment (Alpaste MH-6601)" (Office Action, page 3, lines 7 to 12).

[2] Arguments against the rejection

Regarding the Examiner's position (a)

Reconsideration of the Examiner's position (a) is respectfully requested in view of the amendment to the claims.

Claim 1 recites: "applying an aqueous luster thermosetting base coating composition (A) . . . to a substrate in two to five stages, in such a manner that the thickness of the base coating composition (A) applied in each stages becomes 0.3 to 5 pm when cured."

The claims recite in step (1): "applying an aqueous luster thermosetting base coating composition (A) **...to a substrate** in two to five stages ..." The present amendment clarifies the term "substrate." In the claims as clarified, the substrate itself does **not** have a coating layer

formed of the aqueous luster thermosetting base coating composition (A). Therefore, the claims recite the step of applying an aqueous luster thermosetting base coating composition (A) to a substrate that does **not** have a coating layer formed of the aqueous luster thermosetting base coating composition (A), in such a manner that the thickness of the base coating composition (A) applied in each stage becomes 0.3 to 5 μm when cured.

This step recited in the amended claims of this application is completely different from that of Tomioka, where metallic paint is painted on a substrate in such a manner that the thickness of the metallic paint applied becomes 8 μm when cured. This step of the present claims is not suggested or motivated by the reference.

Further, step (3) of Claim 1 also defines "applying an aqueous luster thermosetting base coating composition (C) . . . to the uncured or heat-cured **coating layer of the clear coating composition (B)** in two to five stages, in such a manner that the thickness of the aqueous luster thermosetting base coating composition (C) applied in each stage is 0.3 to 5 μm when cured."

Tomioka simply teaches that a luster coating composition is applied on an intermediate coating composition so as to form three layers, having thicknesses of 8 μm , 4 μm , and 4 μm , respectively. Therefore, even if Tomioka were combined with Takashi, a person skilled in the art would not think of forming a coating layer of a luster coating composition **on a clear coating layer** in such a manner that the thickness of the luster coating composition applied is **0.3 to 5 μm** .

Regarding Examiner's position (b)

The Examiner's position (b) is that the previously presented evidence of unexpected results is not commensurate with the claims, since the Declarations submitted on March 17, 2010 ("Declaration I") and October 20, 2010 ("Declaration II") gave examples only for a specific resin, crosslinking agent and flaky luster pigment.

However, with respect to density and flip-flop property of a coating layer, the number of stages for applying a luster coating composition, the thickness of the composition applied in each stage, and the size of a flaky luster pigment are important; and these are thus important limitations of the present invention. Other parameters (the resins used for the aqueous luster thermosetting base coating compositions and the composition of a cross-linking agent, etc.) have relatively smaller effects on the density and flip-flop property of the obtained coating film. Therefore, even when the resins used for the aqueous luster thermosetting base coating compositions and the composition of a cross-linking agent, etc., are changed from those recited in the Examples of the specification or those stated in Declaration I and Declaration II, effects that are similar to that achieved by the present invention can be obtained. Specifically, the following (i) to (vi) are the result thereof:

(i) The coating film obtained by applying an aqueous luster thermosetting base coating composition in two to five stages, in such a manner that the thickness of the base coating composition applied in each stage becomes 0.3 to 5 μm when cured; applying a clear coating composition; further applying an aqueous luster thermosetting base coating composition in two to five stages, in such a manner that the thickness of the base coating composition applied in

each stage becomes 0.3 to 5 μm when cured; and applying a clear coating composition, shows a highly dense texture and excellent flip-flop property (Experiments 1 to 3 and 7 to 9).

(ii) Comparatively, when a series of application of an aqueous luster thermosetting base coating composition and application of a clear coating composition is repeated twice, wherein each application of the aqueous luster thermosetting base coating composition is conducted in one stage in such a manner that the thickness of the aqueous luster thermosetting base coating composition applied becomes more than 5 μm when cured, although the total thickness is similar to that obtained in item (i), the obtained coating film shows significantly inferior dense texture and flip-flop property (Experiments 4 and 10).

(iii) Even when an aqueous luster thermosetting base coating composition is applied in two stages in such a manner that the thickness of the aqueous luster thermosetting base coating composition applied in each stage becomes 0.3 to 5 μm when cured, if the aqueous luster thermosetting base coating composition was already applied in one stage in such a manner that the thickness of the aqueous luster thermosetting base coating composition applied becomes more than 5 μm when cured, the obtained coating film shows undesirable dense texture and flip-flop property (Experiments 6 and 12).

(iv) Further, when an aqueous luster thermosetting base coating composition is applied in two stages, in such a manner that the thickness of the aqueous luster thermosetting base coating composition applied becomes more than 5 μm when cured, and a clear coating composition is further applied thereon, the obtained coating film shows inferior dense texture and flip-flop property (Experiments 5 and 11).

(v) Experiments 4 and 10 (item (ii) above) are different from Experiments 5 and 11 (item (iv) above) in that a series of application of the aqueous luster thermosetting base coating composition and application of the clear coating composition is repeated; however, the obtained coating film shows no improvement in the dense texture and flip-flop property. Further, Experiments 6 and 12 (item (iii) above) are different from Experiments 5 and 11 (item (iv) above) in that the number of the stages of applying the aqueous luster thermosetting base coating composition was increased, and the thicknesses of the coating composition applied in the second and third stages were made thinner; however, no improvement was observed in the flip-flop property and the dense texture.

(vi) Therefore, the evidence in the previously filed Declarations demonstrates a clear criticality associated with the claim limitations described in item (i) above, which are characterized in that the thickness of the aqueous luster thermosetting base coating composition applied in each stage was made thinner, and that a series of application of the aqueous luster thermosetting base coating composition and application of the clear coating composition is repeated. The evidence demonstrates that the obtained coating film shows excellent density and flip-flop property that are completely unexpected over the cited references.

Additional evidence addressing the Examiner's position (b)

As discussed above, Applicant submits that the Declaration I and Declaration II, previously made of record in this application, demonstrate a criticality that is clearly associated with the **particular limitations** on the number and thickness of coats in the present claims, and

the material selected for the water-dispersible resin, crosslinking agent and flaky luster pigment would not be critical in achieving the unexpected effect.

However, to directly address the Examiner's comments, Applicant here submits a Declaration under 37 CFR 1.132 by Tsukasa Fujieda, signed June 10, 2011. In this present Declaration ("Declaration III"), a composition that is completely different from that in the previous Declarations is used, but the result is that the limitations of the present claims again lead to a coating film having excellent density and flip-flop property.

Reviewing Declaration III, in Production Example 1 (pages 2-4), an acrylic resin emulsion is made from monomer emulsion 1 (including methylenebis acrylamide, styrene, methyl methacrylate, ethyl acrylate and butyl acrylate) and monomer emulsion 2 (including methacrylic acid, 2-hydroxyethyl acrylate, styrene, methyl methacrylate, ethyl acrylate and n-butyl acrylates). This is different from the acrylic resin emulsion in Production Example 1 in Declaration II (pages 2-4) and Production Example 1 in Declaration I (pages 2-4).

In addition, in Declaration III, Production Example 2 (pages 4-5) is a polyester resin made from 1,6-hexanediol, hexahydrophthalic anhydride, and adipic acid.

In Declaration III, Production Example 3 (pages 5-6) uses Production Example 1 and Production Example 2 to make an Aqueous luster thermosetting base coating composition (A-2).

A base coating composition (B-1) is also prepared, as well as another aqueous luster thermosetting base coating composition (A-3).

In Experiment 1 of Declaration III (see pages 13-15), a coated sheet is prepared by coating a substrate using Aqueous luster thermosetting base coating composition (A-2) and

clear coating composition (B-1), using two stages of application of (A-2) (each 3.5 μm) in the first coating layer, and again in the third coating layer, consistent with claim 1.

Experiment 2 (pages 15-18) is similar to Experiment 1, again using two stages of application of (A-2), except that the thickness was 5 μm first stage and 2.5 μm second stage in the first application, and in the third layer over the cured coating layer of clear coating composition (B-1), two stages of 2.5 μm were used.

In Experiment 3 (pages 18-20), in the first layer coating on the substrate, five stages of application of (A-2) at 2 μm were used, and in the third layer over the cured coating layer of clear coating composition (B-1), five stages of 2.0 μm were used.

In Experiment 4, the procedure of Experiment 1 was followed, except that each of the first and third coating layers used a single stage of 7 μm .

In Experiment 5, the first coating layer was two stages of 6 μm , and the method was a two-coat-one-bake method.

Experiment 6 used the method of Experiment 4, except that three stages of application of (A-2) were used: 8 μm , 4 μm and 4 μm .

Experiments 7-12 were performed in the same manner as Experiments 1-6, except that an aqueous luster composition (A-3) was used instead of (A-2).

The results are shown in Tables 1 and 2 on page 25. As can be seen, excellent results are seen for Experiments 1, 2 and 3, and for Experiments 7, 8 and 9, all of which meet the limitations of claim 1. Specifically, for all of these, the density of texture has a relatively low HG value and grade A for naked eye observation, and the flip-flop property has a relatively high FF value and a grade A for naked eye observation.

By contrast, Experiments 4, 5 and 6, and 10, 11, and 12, which do not meet the coating limitations of claim 1, are all inferior in the density of texture and the flip-flop property.

To summarize, in the experiments in Declaration III, two different aqueous luster thermosetting base coating composition (A-2) and (A-3) are used, both of which are compositionally different from the aqueous luster thermosetting base coating compositions of Declarations I and II. However, in Declaration III, as in Declarations I and II, the advantageous effects of the present invention are clearly commensurate with the limitations of claims 1 and 10 on the **number of stages** of coating of the aqueous luster thermosetting base coating composition on the substrate in step (1) and on the uncured or heat-cured coating layer of the base coating composition in step (3), and on the **thickness applied** in each of these stages.

That is, the three Declarations demonstrate a criticality for these limitations of claims 1 and 10, and the advantageous effects are seen for different resins, cross-linking agents and flaky luster pigments. The effects of the present invention are therefore commensurate in scope with the present claims.

Pending claims 1, 9-10, and 18 are therefore not obvious over Tomioka (U.S. Pat. No. 5,079,030) in view of Takashi et al. (JP Pub. No. 2001-149857), Carpenter (U.S. Pat. No. 5,320,673), Noritake et al. (JP 2003-117481) and Yoshioka et al. (U.S. PGPUB No. 2002/0007769), taken separately or in combination.

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Reply to OA dated January 4, 2011

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Petition for Extension of Time
Declaration under 37 CFR 1.132 signed by Mr. Tsukasa Fujieda on June 10, 2011